

THE GEOGRAPHICAL MAGAZINE



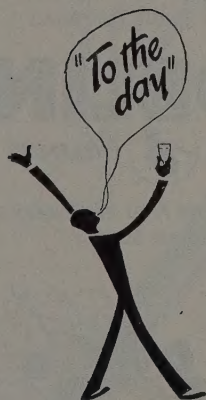
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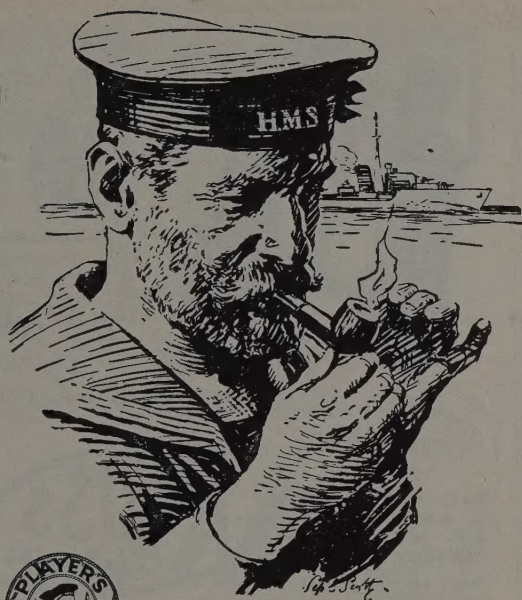
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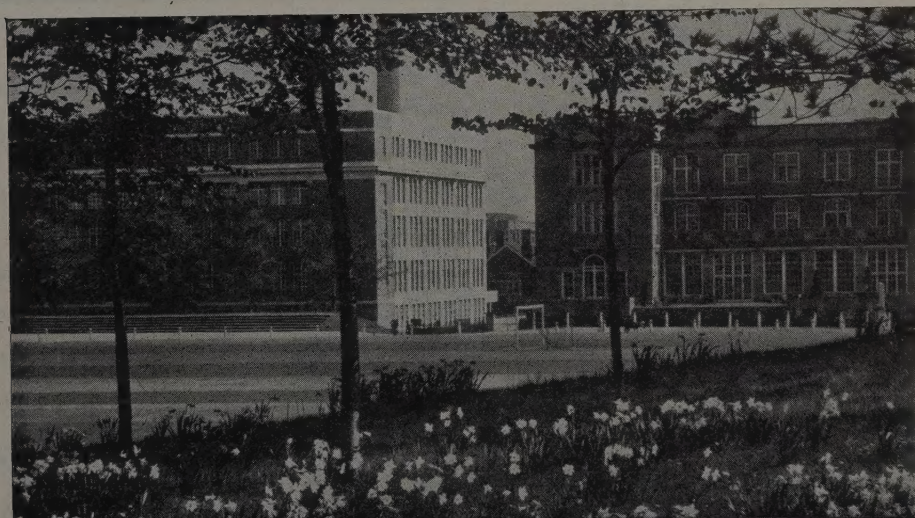
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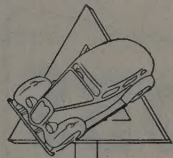


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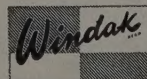


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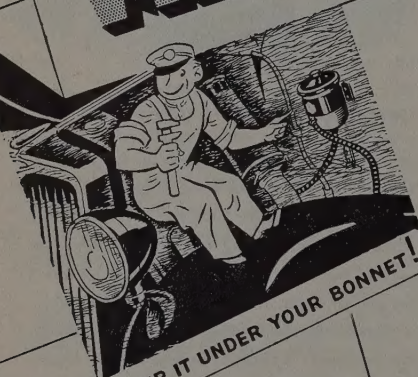
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THE GEOGRAPHICAL MAGAZINE

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The founders of THE GEOGRAPHICAL MAGAZINE undertook the legal obligation to assign one half of all profits distributed by way of dividend or bonus to a fund for the advancement of exploration and research, and the promotion of geographical knowledge. This fund is administered by a Board of Trustees, whose Chairman is the President of the Royal Geographical Society or his nominee.

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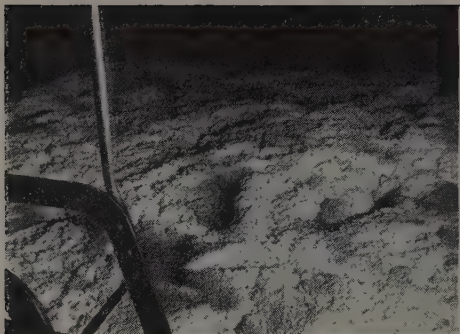
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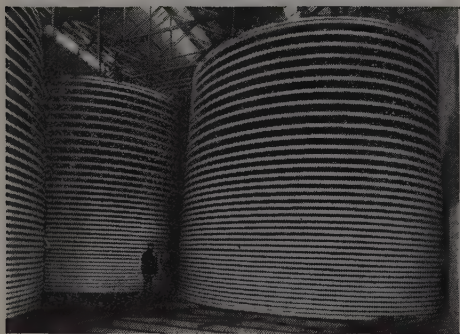
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Fresh Fields for Geographers

by LORD RENNELL OF RODD

PRESIDENT OF THE ROYAL GEOGRAPHICAL SOCIETY

THAT well-known traveller Mr F. Kingdon Ward has recently written a little book on *Modern Exploration* which is as stimulating as it is provocative. His theme is that the exploration of the world, so far from being complete even in its main outlines, has really only just begun. Up till now we have scarcely seen the end of the preparatory or empirical stage. It is true that we know the shape of the earth and the principal features of all the land masses; and that although detailed maps for many areas are still lacking, work on them progresses steadily. Because of this, it has been thought that exploration of the world was over, except for filling in some small blanks. But this is not the whole story any more than it is wholly true, for there are still major geographical problems to be solved, for instance in Central Asia and in both the Polar land masses. Yet even taking these not unimportant points into account, Mr Kingdon Ward maintains, and most geographers will agree with him, that geography in its widest sense is still in its infancy and that therefore exploration, which is the field work of geography, has only just begun.

Geographers may differ from Mr Kingdon Ward when he writes "Geography has no meaning apart from man's relationship to the earth on which he lives"; though they will not disagree with his statement that "Geography deals with man's relationship to the earth on which he lives." And here we have the key of what geography really is. Geography is the science which considers the shape, structure, aspect and regions of this planet, the earth. Selenography is the parallel branch which concerns itself with the moon. Science can and does concern itself with the moon, the other planets and indeed all sidereal bodies not only in their relation to man, though that is one aspect of the work. Therefore geography can have meaning apart from man's relationship to the earth, but geography can and must deal with this relationship as a major part, perhaps the major part, of the science.

Now, given this premise, let us see what we mean when we talk about geography and exploration. We have accepted that man's relationship to the earth is a part of geography, but that means also man's relation-

ship to the soil, air, plants, animals and minerals off which he lives. This also involves his weather, his houses, his bodily shape, his customs and his work. If, then, all these are connected with geography, in what directions should we expect the horizon and depth of geography and exploration to develop? This is to be the theme of a series of articles in *The Geographical Magazine*, which will consider the relationship of man to the surface of the earth, the earth's crust, the atmosphere, and the influence of external bodies like the sun, moon, planets, and cosmic elements. The articles are intended to introduce to the public the wider implications of geography as we must now think of it; they will show how much more remains to be done than has been done in field exploration. But there are one or two important preliminary points to be made here which these articles will in due course bring out.

Geography, in the sense we have described, requires, as do all other branches of science, that information and material must be collected before conclusions can be reached. This means records. This means that explorers in the field must make and bring back their records in the form of notes, maps, specimens and so forth. The romantic days when explorers were in the popular mind indistinguishable from mere travellers, are over. A man who goes to a distant and more or less unknown part of the world and just comes back to say he has been there or to write a vague account is no use as an explorer and no use to geography. He may even do harm if by his going there he makes it more difficult for others who, trained and careful in their work, could have brought back accurate scientific material which he failed to do. The modern explorer must go armed with the right equipment and trained to use it. Since the branches of geography, ranging over the wide field we have considered, are more than one man can deal with in his comparatively small compass of education, an exploring expedition will be the more fruitful if composed of several members, each a specialist in his own field. All recent exploration, such as has for instance been rewarded and helped by the Royal Geographical Society, has been of this sort. The Royal Geographical Society are not interested in the

man or woman who has just been somewhere unusual even if the circumstances have been arduous and dangerous. The Society and all geographical bodies need data for geography, not adventures (though scientific exploration usually has plenty of the latter too), and they are intensely interested in all the information they can secure.

Broadly speaking, it doesn't matter what sort or branch of scientific work is done by explorers because the field is so vast that all the material collected can be used. I remember in my two Saharan journeys keeping very rudimentary meteorological diaries and instrumental records of the simplest sort, namely, aneroid and thermometer readings with notes on winds, clouds and humidity. I was more than surprised and gratified to find that they were of sufficient interest to the meteorologists on my return for them to publish a monograph on the weather of that part of the Sahara with quite elaborate calculations beyond anything I could understand or had even conceived. Nor is it necessary to go so far afield as the Sahara in order to provide useful meteorological data. In fact, as is well known, almost anyone can assist in the scientific study of climate by making regular and accurate readings of the thermometer and barometer on his own doorstep, and sending his records to those who are trained to compare them and draw sound conclusions. Professor Taylor, in this number of the Magazine, points to much that is still unascertained about climate and its effects on human life.

For several generations, explorers trained in zoology and botany have been extending our knowledge of the present distribution of animals and plants upon the surface of the earth and near the surface of the oceans; but the agencies by which they have been distributed are as yet imperfectly understood, and there is no geographical study better worth undertaking than that of the relationship between groups of animals and plants and their environment. Mr Kingdon Ward, himself a distinguished explorer in the botanical field, puts forth a number of stimulating ideas about the 'ecological' aspects of botany and shows how many unanswered questions the present generation can set itself to solve.

The human race is very largely affected by geography in all its manifestations. The houses, clothing and diet of men and women are primarily dictated by geographical environment; consequently their capacity to work, produce and propagate themselves are connected with geography. We have really

only just begun on this field. Among the early and best products of this side of geography in Britain has been a series of maps on land utilization and panorama or scenic effects. These maps, which are not well enough known to the general public, show how much exploration has been done and remains to be done, even in the United Kingdom. A glance at the sheets will open up a vista of possibilities for work in other parts of the world.

Reference to maps leads one to the basic proposition that in order to record geographical material maps, more maps and still more maps are needed. If we record something about the earth it must be by reference to a map which alone can show quickly and accurately where and what it is that we are recording or discussing. From the earliest beginnings when the nomad draws on the sand a picture of the next day's journey by camel, to photographic mapping from the air, the desire and necessity of civilized man to have a pictorial record of the earth's surface has been felt and progressively achieved. Maps are not in fact nowadays used in civilized countries primarily for finding the way to a place. They are to the geographer what the symbols he uses are to the mathematician. Maps are records of facts; it is practically impossible to keep records without them, though the records of other people who have not made, or cannot make maps, can be incorporated on them. That is where geographers have a unique advantage over the exponents of many other branches of science: they can build up each other's detailed work by interpolation and the humblest can contribute something.

It is a very interesting thought that modern maps are in a new but only slightly different and standardized form reverting to the old maps which interest and amuse us. The 17th-century and earlier maps, such as those which accompany Dr Lynam's article, are frequently embellished with pictures of the animals and fishes appropriate to a given area. It is true that these were sometimes put in to decorate the map or fill in blanks. The practice is not really very different from the modern craft which serves to denote in the land-utilization series the type of country used for arable farming or stock raising, or the whereabouts of coal-mines and deer-forests, or good views along the coast of Cornwall or Wales. The problem is that maps of civilized countries are becoming so full that they have already had to be divided into series, for special purposes.

This use of maps is closely connected with

the observation which has been made by students of Colonial Affairs, that before any major scheme for a colony can be considered in all its financial and economic implications a survey is required of natural and human resources. Early colonial railway and road surveys have frequently involved quite unnecessary expenditure on alignments which proved wasteful simply because there were no adequate maps to start with. This was realized, for instance, by the late Sir Gordon Guggisberg when he was governor of the Gold Coast. Before he was willing to embark on a programme of railway and road expenditure he insisted on having a proper survey and map of the country. The cost of the survey was more than repaid by the economies in the development programme. In his article in the November number of this Magazine, Professor Simey explained why maps, based on surveys of social and demographic factors, are essential before plans for development in the West Indies can emerge from the stage of mere 'astrology' in which one man's guess or prejudice is as good as another's. Thus the ascertainment and recording of facts about human life in relation to its environment is one of the most useful services that geography can perform; and even in the most familiar branch of geography—map-making—so much more remains to be done than has been done that the scope for the explorer is almost unlimited.

Next to maps and written records, photographs play the most important part. Here again the accurate pictorial record is as indispensable as the map. Description and scientific notation are usually inadequate to record certain data. Physical characteristics of the human race in spite of accurate measurement and scales, for instance of cranial shapes, can best be recorded for all purposes photographically. The same applies to scenery and vegetation. While these uses for photography have been apparent for some years, the recent developments of photography in surveying for archaeological and geological maps are not so well known. The camera has been responsible for disclosing many hitherto invisible archaeological sites in England and elsewhere and contributed greatly to determining the extent and location of the Rhodesian copper deposits. During the war, thanks to the R.A.F., the interpretation of photographs has opened new fields for all branches of geography which, as is known to many readers, played a fundamental part in military strategy. Teams of geographers in all branches were gathered by the Service Ministries to collect and sift data, and even to

procure new data under fire and behind the enemy lines, for the Sicilian and Normandy landings, for paratroop operations and for naval bases in remote parts of the world. The lack of enough information for these highly practical purposes was often acutely felt.

Most of the foregoing deals with the surface of the earth, including the oceans; enough has been said perhaps to point to what remains to be done and to the value and breadth of geography. There remains the earth below the crust and the atmosphere above. The human mind boggles at the moment to know where or how to begin this exploration below, say, the depth of a mine-shaft or above the range of a stratosphere plane. In these realms of pure and applied science there is a virgin field for exploration. A little has been done with echo sounding and percussion ranging below the earth's surface; a little has been done with electric waves above it. But how much remains! And all of this has a direct bearing on the configuration of the earth itself and on the human race which inhabits it. We note, but know little, about earthquakes and volcanic phenomena. We are affected by solar and cosmic radiation in our climate and tempers—especially when 'atmospherics' affect the radio. But we are scarcely able to read or write the language which has still to be learned of this side of geography.

Almost forty years ago Rudyard Kipling wrote a remarkable story, *With the Night Mail*, in which he foretold the completion, by A.D. 2000, of an international air traffic administration under an Aerial Board of Control. The increasing authority attributed by mankind to this body is seen to be the natural consequence of certain scientific discoveries, largely in the field of meteorology and atmospheric electricity. The Powers of the Air, however, can still by no means be defied; an aircraft is buffeted by gusts "like the pinions of angry angels" and its pilot is warned that "if one intrudes on the Heavens when they are balancing their volt-accounts . . . one must not complain of any rudeness in the reception." We have all heard of the wonders of wireless and radar and of the effects which, even in their present rudimentary stage of development, they are producing on navigation by air and by sea. Yet a succession of accidents due to unknown causes, with the loss of valuable lives, should induce in us a proper spirit of humility. In this field, as in so many others, it will take the combined resources of geographers everywhere to establish the basis for a satisfactory relationship between man and the earth on which he lives.

Do We Know Enough about Climate?

by PROFESSOR E. G. R. TAYLOR

"FOR scholars," Professor Whitehead tells us in his fascinating book *Adventures of Ideas*, "the reasonable topics in the world are penned in isolated regions, *this* subject-matter or *that* subject-matter. Your thorough-going scholar resents the airy speculation which connects his own patch of knowledge with that of his neighbour." And so the geographer must reluctantly consent to be excluded from the coterie of scholars, for the object of his study, man-in-his-environment, defies isolation. It is essentially a study of the 'interrelatedness of things', and the geographer is for ever straying into this man's patch and the other man's patch, only to be warned off by the rightful owner, the geologist, the meteorologist, the economist, the historian and all the rest, who indignantly exclaim "You haven't even mastered the vocabulary and the grammar of my language!" Yet trespassing there must be. Neither the atmosphere, nor the earth's crust, nor the balance of trade, nor the growth of cities is a mere thing-in-itself. Each is part of the complex, interlocking, interacting whole which we term man-in-his-environment. The understanding of that whole is a condition of human progress.

Who is sufficient for these things? Many a geographer would gladly relinquish the task, and go back to the conning of lists of capes, bays and straits which in popular belief is still his principal, if not his only, function. But until someone more capable takes on the job he cannot abandon it. And reading further in Whitehead he is glad to learn that scholarship must be balanced by speculation to ensure the progress of thought, and that even "sheer ventures of rash speculation" may prove fruitful. It is on this note that we turn to the latest work of America's most inveterate geographical speculator, Ellsworth Huntington, who in his recently published book, *Mainsprings of Civilization*, presents us with the garnered fruits of over a quarter of a century's controversial writing. For Dr Huntington has found yet another Master Clue to World History, and it can be given in one word—Storms. Profoundly impressed by what he saw as a young man suddenly transported from the New World to the oldest part of the

Old World, he asked himself, why have these civilizations vanished? As a physical geographer he looked for the answer in the physical sphere, and gave it as—Desiccation. But what is desiccation? It is less and less water. Less water surely results from less rainfall, and less rainfall in turn from fewer storms—in fact from Climatic Change. Henceforth Dr Huntington devoted himself to collecting evidence, sometimes impressive, sometimes dubious, of climatic change, and gradually developed the more positive thesis that not only did a lessening of storms mean civilization's decay, but that storms in themselves made mankind civilized.

But not all storms. Potency resides in those storms which we refer to as cyclonic depressions. These, theoretically at least, involve an insweep of cool or 'polar' air, following upon the passage of a mass of warm or 'tropic' air. Most of us are familiar with the phenomenon. Following heavy rain there come clearing showers, the grey sky gives place to bright blue dotted with clouds, the temperature falls perceptibly. "Out of the chamber of the south cometh the storm: and cold out of the north," said the Patriarch Job. It is this drop of temperature, experienced all along the cold front (as meteorologists term it) of the polar air, that is the governing factor in Huntington's theory. It generates alertness, and from alertness everything else springs. "Why", he asks, "were men's minds so alert, and why did civilization make such active progress in ancient Egypt, Greece and neighbouring lands? . . . At their stages of highest development ancient Greece and Egypt appear to have been distinctly more stormy than now." And again: "The stormy phase of the long climatic cycle which culminated four or five centuries before Christ must have had a good deal of effect upon the alertness of the Greek geniuses." On the other hand, the Dark Ages (save in Ireland) were poor in storms, and consequently they "were characterized by widespread depression of mental activity." After an interval, however, the weather again got worse, with excellent results: "The climax of general alertness reached in Europe in the 14th century

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Wide World

Can it be climate that has robbed this recumbent Hindu of alertness?

From 'The Spirit of India' (Batsford)

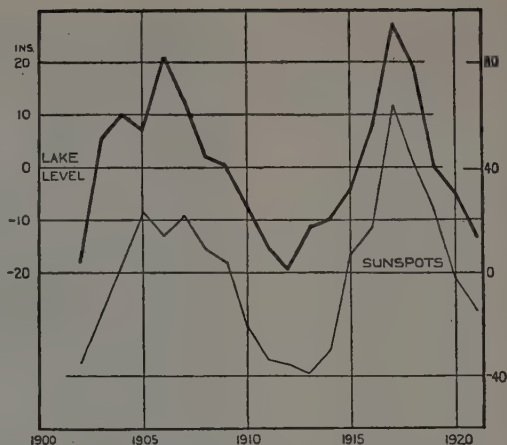
Paul Popper



may be associated with the climax of cyclonic storms at the same time. The storms brought with them extremes of cold and heat, drought and flood . . . the wealth and grandeur of Venice, Florence and Genoa illustrate what happened."

For evidence in support of the human side of his thesis, Dr Huntington turns to the performance of piece-workers in Connecticut and examination candidates at West Point. There is a heavier factory output and a higher score of marks on cooler days. Indeed when the great hurricane swept New England in 1938, some students who happened to be sitting an examination at the time secured results that were quite phenomenal! Moreover an analysis of public library records in Boston indicated that rhythmic alertness was to be detected here too. Not only were more books taken out as a cold front was approaching but markedly more non-fiction books. Business operations showed similar pulses, and the general conclusion was reached that "such storms not only provide rain but are associated with the kind of stimulus that encourages people to take serious books from the library, expand their businesses and invest on the stock-market". Even mice behave more like good Bostonians when reared in cool air: "Although less sexually inclined . . . [they] breed earlier and produce larger, more frequent and more vigorous litters than mice raised in warm air. Psychologically they are more alert."

Intermediate in phase between the vast climatic cycles deemed to be matched by epochs in the history of civilization and the day-to-day pulsations governing visits to the library, lesser cycles measured in months and years link animate and inanimate nature. Particular attention is focused upon a 41-month cycle found in the production of pig-iron, the rise and fall of stock prices, and the solar constant, that is to say the radiant energy reaching the earth from the sun. Seeking a connection between these disparate phenomena, Dr Huntington finds, after some manipulation of the figures, a 41-month cycle in the electric potential between earth and air at Eskdalemuir (Dumfries) and Kew (London). Seizing upon this tenuous thread, he declares: "When electric variability increases, people apparently feel relatively buoyant and optimistic. They are therefore ready to risk their money on stocks and in other ways with very little attention to unfavourable signs in business and politics. At the same time consumers, merchants, manufacturers and others feel a similar stimulus. Therefore they increase the size of their orders, open new lines of activity, and make

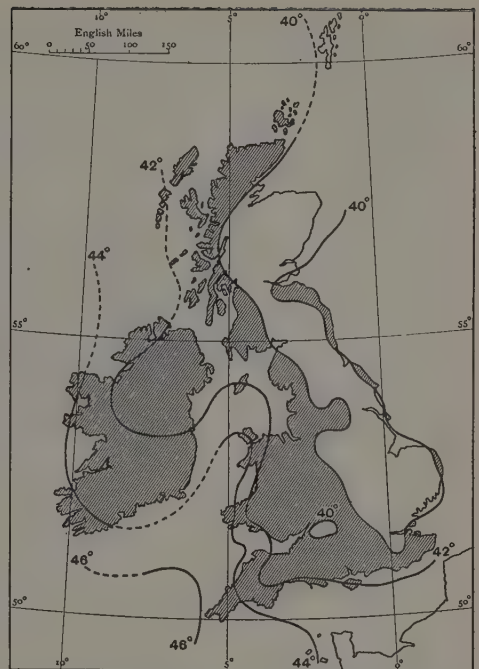
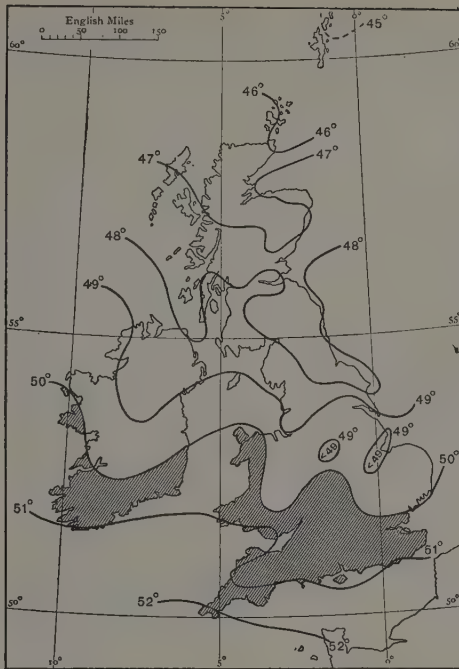


From Napier Shaw's 'The Drama of Weather', C.U.P.

The sunspot cycle, ascribed to the influence of Saturn and Jupiter, is just three times the 41-month cycle of solar energy. Its rhythm matches that of lake levels in Central Africa. Why?

plans for enlarging their business. Thus the ascending phase of a cycle is generated. . . . The reverse of all this seems to occur when atmospheric electricity becomes less variable with an apparent decrease in its stimulating effect." And again: "Among all the differences between the past and the present in the Mediterranean lands and Western Asia, none is more important than the great change which has come over the human spirit. That change is essentially the same as that which appears in Americans on a small scale in contrasted phases of the 41-month cycle. At one stage they are optimistic and eager to do something new. At the opposite phase they are pessimistic and inclined to put on the brakes."

It is easy to smile at such generalizations when presented in so summary a form, but it would be over-bold to deny that there is a relation of some sort between civilization and climate. We may protest against the employment of such yardsticks of civilization as the number of motor-cars, size of income, high credit rating, names on the social register, in the *Dictionary of National Biography* and in *Who's Who*; it still remains true that Huntington's map indicative (as we should say) of material prosperity in these terms does roughly correspond to a map of the incidence of cyclonic storms. Nevertheless we know that owing to immense gaps between observing stations even the best climatic maps are largely conjectural, and when we find the



Both charts from Bilham's 'Climate of the British Isles', Macmillan

The left-hand map shows temperature averaged out for the year: the north is colder than the south. The right-hand map shows temperature in mid-winter: the east is much colder than the west and London is often quite as cold as Aberdeen. Which view of climate ought to decide our coal rations?

argument transferred to electric potential on the strength of two records only, and later to the effects of ozone as regards which we have no reliable data at all, when, furthermore, we are asked to go back in time through the ages and depend upon even more slender and more indirect evidence, then we cry Halt. For the long and short of it is, we know far too little about climate, far too little for ordinary practical purposes, let alone for interpreting history!

Why is it, for example, that, when we have experienced in this country some quite extraordinary and unseasonable weather, 'Our Meteorological Correspondent' invariably writes to the newspapers and proves statistically that it was nothing unusual? He is able to do this for two reasons. The professional meteorologist is concerned with averages, and if we take averages over a wide enough area or a long enough time, abnormalities cancel one another out. Moreover observing stations are always carefully chosen (and rightly so) in order that they may be subject to the minimum of unusual conditions. But what we experience is the actual and not the average weather, and we are just as likely to

live in the peculiar as in the 'normal' localities from the point of view of climate. How many people realize that the wettest parts of Britain are ten times as rainy as the driest? And how many people know that our coal rationing scheme is based on the quite artificial average temperature for the year, so that the very cold winters experienced in the south-east of England, but not in the south-west, are deemed by the Minister to be offset by the hotter summers experienced in the same locality although our fires are not then alight? We are to be warmed by memory of summer days.

The variability of climate from year to year and from place to place, often between places less than a mile apart, is much greater than the changes between phase and phase which Huntington believes to be so vital. Now therefore that, in countries like our own, the normal picture or pattern of climate is fairly thoroughly known, attention must be focused on the local variants, the micro-climates as they are called. Mere embroideries on the fringes of the huge air-masses which, now from the West Atlantic, now from Scandinavia, now from the Azores, take possession of our

skies, the micro-climates are yet of prime importance to the farmer, the planner, the health authority, the home-maker. Country folk have a grasp of these local vagaries, but it is merely qualitative, not quantitative, and often tinged with superstitions. Is it really colder in the country than in the town, or merely less sheltered? Note how old farms and cottages are always tucked well beneath the hill-brow or behind a belt of trees, while new bungalows stand starkly on the sky-line. Note, too, how in the country the old rule for houses is 'face the sun', and not 'face the street' as in our towns. Again, is it true that thunderstorms follow the river and skirt the hills? Do we know the answer well enough to site our glasshouse industry more carefully in view of the great damage done by hail-stones? Ought it always to be the north-east quadrant of a large city that is 'zoned for industry', if we want to avoid a smoke nuisance? Or may not topography twist the most frequent wind direction through several points? And where should we place our laundries, and the workshops making delicate fabrics and instruments of precision, all of which demand clean and clear air? Not, strange as it may seem, in exactly the opposite position to the factories. Smoke- and dust-

laden air travels far, but not quite as we should expect. Our airmen have observed the black palls which obscure our great towns, or sometimes stream out banner-like down-wind. Their character and density is much affected by natural fog; and fog, like mist and haze, is peculiarly the result of local circumstances. Haze is increasingly perceptible with distance, and the frequency with which Gloucester Cathedral, for example, appears from the Cotswold scarp to rise from a mist suggests a possible explanation of the immunity of the city from enemy action.

All forms of condensation are due to the chilling of the air, and some of the most extraordinary micro-climates are due to the fact that cold air, being relatively heavy, flows down-hill. Canalized in a steep-sided valley, such air may form according to circumstances an invisible cold stream, or an invisible cold lake, with exact contours and surface marked by a level of ground fog or by the upper limit of destructive frost. Market gardens, hop-fields and orchards should always have good air-drainage, as indeed should dwellings, and if they lie in the path of an air-stream, hedge-breaks should be planted athwart it. It is only, of course, in still weather that air flows in accordance with



The Times

Our English weather displays startling variability: every Londoner knows the suddenness with which a pall of fog descends at midday and the way in which its density varies widely from place to place



Fox Photos

Here is an L.N.E.R. express running into London. Exposure to the north-east wind is quite as likely to have hampered its passage through the snow-laden countryside as is altitude above sea-level

gravity, but the result may be that high ground is very many degrees warmer than low, a reversal of the natural order of things that gardeners are well aware of: here again we want quantitative as well as merely qualitative knowledge.

Fog is inimical to health as well as disastrous to traffic. Snow, too, may paralyse movement on rail and road, and we know all too little about its incidence. This is largely because the most important facts, namely, how long it lies and where and how deeply it drifts, are hardly the concern of the meteorologist. Offhand we should say that in this country snow is a phenomenon of the hills, but actually exposure to the north-east wind is perhaps equally important, as officials on the North Eastern Railway are well aware. Both snow and fog figures stand unusually high at Princeton on Dartmoor. Perhaps if we had many more observers at high altitudes we should be able to say whether 'unusually' is or is not the correct word to use. Certainly it was an unfortunate choice for a prison site, and still more unfortunate in respect of its latest function—a Borstal institution. If we know anything at all about climate and man it is that sunshine promotes well-being both of mind and body. But our sunshine map, too, can only be drawn in crudest outline.

This is to wander far from Ellsworth Huntington, who deserves our thanks if only because he forces us to admit that we do not know enough about climate to confute him. Nevertheless, we can say that his climate analysis is much too simple, too naïve. So far from there being 'a' climate belt in the temperature zone adequately described as now more or now less stormy, now further north or further south, there is not even (except in deceptive averages) 'a' climate of Britain: there are only climates, whose variations are by no means always in the same sense. What would be the result of comparing the book-borrowing records of Bath and Skegness? Of Bournemouth and a Butlin camp? It is perhaps because we are reluctant to stem from the same climate-bred alertness the Dialogues of Plato and a more successful selling of neckwear in New York that we are so sceptical of the significance of the reading habits of Bostonians. Could it not be that the onset of a 'cold front' gives them a cold in the head and inclines them to sit by the fire with a nice book? Not only do we know too little, statistically, about climate as actually experienced, we know even less about atmospheric electricity and ozone. It may be that these do hold the secret of the Age of Pericles. But we prefer to reserve judgment.

Mexico: a Marriage of Cultures

Notes by R. H. K. Marett



Toni Muir



Paul Popper

'Indian' Culture Persists

Thousands of years ago—perhaps just after the last ice-age—primitive Asiatic tribesmen wandered over the Behring Straits, peopling in the course of centuries the vast empty spaces of America. Nomads at first, these earliest American Indians at last settled down in the highlands of Mexico where they developed agriculture. By the time of Christ they had achieved a high level of culture. Their ruined temples and cities still decorate the Mexican landscape; intricate sculpture reflects their artistic genius



To this day over a third of the inhabitants of Mexico are of 'Indian' racial types, the evidence of their physical appearance and hair-section pointing to Asiatic origins; and in many parts of Mexico the ancient way of life persists to a large extent. Village women spend much of their day grinding maize ('Indian corn') on primitive stone mortars and slapping into shape the tortillas which, as in Aztec times, are still the staple diet of the peasant. Many of the village arts and crafts, such as pottery making, spinning and weaving, have aboriginal roots

The Tarascan Indians of Lake Patzcuaro include among their equipment, besides butterfly-shaped fishing nets, a spear-thrower of a model similar to that which Stone Age Men used to hunt their prey

Blark Star





Poul Burnford. A.R.P.S.

Spanish Culture Predominates

The advent of the Spaniard in the sixteenth century imposed an alien way of life upon the aboriginal community. Ruthlessly the higher traits of the Indian culture were swept away. Symbolic of this new order, the temple of Quetzalcoatl at Cholula was torn down and a Christian church built upon the summit of the great pyramid which had supported the older shrine. In the same way upon the ruins of Tenochtitlan, the Aztec capital, there arose a new city, the Mexico City of today. This soon became the chief centre of Spanish colonial power and of Latin culture in the New World. The cultural brilliance of Spain was transplanted, and took firm root in the rich Mexican soil

Dark-eyed señoritas, proud hidalgos—their modern descendants in Mexico still retain something of the aristocratic tradition of Old Spain. On Sunday the people of the cities flock to the bull-ring. Here is Spain incarnate—the valour, the passion and the pageantry; here are also the long-established procedure and fine points of an entertainment that traces its ancestry to the arenas of ancient Rome



Pictorial Press

Paul Burnford, A.R.P.S.





The Spanish Conquest had two avowed objects—to seek treasure and to implant the Christian religion. As the mines of precious metals descended, the churches and cathedrals rose; wealth from the one was spent to the greater glory of the other. On every side the Mexican scene is enriched by the architectural legacy of Catholic Spain. Other legacies of the Conquest are the horse—a creature inseparable from the caballero, something of whose spirit survives in the proudly mounted and silver-spurred Mexican charro—and with the horseman the cattle he drives, as well as such terms

The Cathedral tower at Alamos, once the 'silver city' possessing the richest mines in the whole of Mexico

Black Star





E. Tisse

The Two Races Unite

Hernan Cortés and many of his valiant captains set the fashion of intermingling between the races, a process which has been going on for four hundred years. It is said that half of all Mexicans are now of mixed Indian and Spanish blood. The two extremes are marked by the pure-blooded Indians surviving, under primitive tribal conditions, in the more distant mountain ranges and among the forests of the south; and by the diminishing aristocracy that, in the cities, can still lay claim to undiluted Spanish blood. The wealth and influence of such families has greatly lessened. The man of the moment and of the future in Mexico is the mestizo, who looks back with equal pride upon his Spanish and Indian ancestry and forward with the calm confidence born of his newly won place in the national life



Black Star

Sunday in the Cathedral at Taxco



E. Tisse

A plumed dancer taking part in the festival in honour of the Virgin of Guadalupe

A Marriage of Cultures

Just as the two races have been merged, so also during the centuries the two cultures have been blended so that in modern Mexico few things are purely Spanish, while few derive entirely from the Indian background. The culture is essentially Mexican. In the countryside maize and beans, the economic basis of the old civilizations, are still the staple crops. The Spaniards contributed the horse, the wheel and domestic cattle. Thus life in the villages follows an ancient pattern, more Indian in character than Spanish certainly, but greatly enriched since the arrival of the white man. In the cities the Latin culture predominates, but here too the blending process has been at work—the Spanish language as spoken in Mexico contains many Indian words, Mexican art draws freely from both Indian and Spanish sources; both races have contributed to Mexican music and drama. For four hundred years Mexico has been a Christian country. Indians pray before the Baroque altars of Spanish colonial times. The Virgin of Guadalupe is worshipped at a shrine where once reigned an older Aztec deity. Pilgrims still flock there as of yore and dance in her honour in the feathered regalia belonging to more ancient ceremonies



Black Star

In the tropical paradise of Tehuantepec the tall, upstanding Indian girls dance with all the poise and grace of Spain; but their dress reflects a mixed cultural heritage. Ancient folk-ways, the remains of Spanish feudalism and the hurly-burly of the modern industrial world . . . all these and more are to be found in the Mexico of today. And in their own way they are all equally Mexican

Period Ornament, Writing and Symbols on Maps, 1250-1800

by EDWARD LYNAM, D.Litt.

EARLY maps, which have lately become very popular, are full of varied interest. Their geographical information is often as delightful as it is incorrect; their Utopias such as Brazil and the Southern Continent recall the aspirations and labours of bygone generations, not yet disillusioned by knowledge; and they have considerable scientific value as illustrating early developments in geodesy, projections and surveying. But they are now being widely collected for their decorative effect and their human appeal, for their naïve pictures of towns and forests, their grandiose cartouches in pseudo-classical or Rococo designs, their inscriptions in graceful old hands, and their brilliant colours laid on by skilful painters. Probably not many amateur collectors realize how much of man's age-old endeavour to portray truthfully the world around him can be gleaned from these picturesque early features when they are examined individually. Familiarity with their changes through the centuries can enable a student not only to date maps approximately and to detect late copies of originals from the style of the churches or the script, but also to appreciate an art which has always reflected contemporary life and customs. The illustrations in this and the next number of *The Geographical Magazine* are intended to supply some general guidance in the history both of scientific representation and of period ornament on maps. An exact and complete survey of the subject is not possible here; nor can precise dates be given for the life of any symbol or convention, since these depended upon the initiative of individuals in many countries with diverse cultures. The notes which follow apply, of course, only to the ordinary small-scale maps of countries and counties which, with estate plans, were the chief maps known to our ancestors.

The first real maps which have survived date from about A.D. 1250, and most of them are maps of the world. They were usually drawn by monastic scribes, who brought the skill with pen, brush and colours which they had acquired in illuminating manuscripts to portray a world in which Scriptural teaching, classical and mediaeval myths, travellers'

tales and the unnatural zoology of the Bestiaries were indiscriminately blended (figs. 1, 2, 19, 21). But from their very purpose maps have always possessed an intrinsic decorative element, independent of marvels—the element of Nature. Once the early draughtsman of manuscript maps had plotted his essential framework of directions and distances, he drew in the features; and these, whether hills or woods, lakes or castles, he made as much like the originals and as artistic as he was able. Most important historically, therefore, is the representation of the four things most familiar to him in his daily life: mountains, forests, towns and the sea. On the early manuscript maps the first three were depicted pictorially and in elevation, just as the artist saw them, and were large out of all proportion for he had no idea of a scale.

MOUNTAINS

The representation of mountains has always been the map-maker's hardest problem, for mountains have length and breadth as well as height, and they hide something round every corner which must nevertheless be shown on the map. Figs. 1, 2 and 19 show some early manuscript attempts to portray ranges of hills. A map of 1335 depicts them rather like cock's combs, while others of c. 1100 cover their tops with little green tussocks, representing woods. Yet they possess two features on which all representation of relief right down to 1850 has been founded: red or white colour on the summits and shading on the sides (fig. 19). The play of light and shadow on hills first gave man the idea of making his pictures of them more realistic, and crude shading of slopes eventually led to our familiar hachuring. The hills in fig. 8, with the light falling direct on their tops leaving their sides in shadow, should be compared with those in figs. 31 and 34, which are 'vertically shaded'. This map of Como and its surroundings was painted by hand about 1440. But the printing of maps from engraved copper plates, which began in Italy some thirty-seven years later, with the enthusiasm for geographical learning which was a feature of the Renaissance and the consequent advances in the new science of surveying soon

combined to bring about manifold changes in cartography. Apart from making the production of maps in multiple copies as easy as that of books, the art and taste of the map-engraver substituted neat conventional symbols for the manuscript pictures with their realistic language of colours. After 1500 the engravers in copper, or 'line-engravers', exercised an ever-increasing influence upon maps, until by 1590 the draughtsmen of manuscript maps were imitating their style, symbols, scripts and decoration in every detail. The persistence of the church-tower and of other methods of representation until late in the 18th century was indeed more probably the result of conservatism among the engravers than among the surveyors who supplied them with manuscript maps to copy.

For mountains many of the first line-engravers contented themselves with little rows of shady sugar-loaves (fig. 20) which gave no more information about heights, areas or gradients than the quaint spirals of 1306. But again two features of historical consequence appear in them. They are shaded on the eastern side; and it has long been a universal convention to shade mountains—though not escarpments—on the east and south-east as if the light fell on them from the west. There is no poetic origin of long sunny afternoons behind this; it came about because sensible draughtsmen have always worked with the light on their left. And, perhaps even more important, these mountains are shown to the reader in 'bird's-eye view', that is, not from ground-level but from about 60° above it. The advantages of the bird's-eye view or profile-plan in showing at once both the site and the façades of buildings in towns was realized by the early engravers of maps and was used right down to 1800 to depict churches and mansions, and sometimes even villages, as on fig. 7.

On some maps engraved before 1500 mountains were portrayed as enormous overlapping slabs of rock, a convention borrowed from the manuscript maps (fig. 5), while from about 1550 to 1600 more comfortable, but deceptive, ascents were in fashion with some draughtsmen: gentle rolling downs (figs. 23 and 24). During some sixty years after 1482 a number of maps were printed from wooden blocks, mainly by Swiss and Germans. As the blocks were cut in high relief, representation of mountains was more difficult than by line-engraving, where the plate was incised. Figs. 9 and 13 show wood-cut hills of the same date. Those on the first are childish, but in the second the map-maker has nearly succeeded, probably quite uncon-

sciously, in representing relief in plan. This method is seen, more developed, in the ridges just east of Cazal Gargur in fig. 26, line-engraved over two centuries later. Some of the line-engravers also used this convention about 1500. The backward state of cartography in England in 1577 is revealed by fig. 6, where large hummocks in full elevation conceal all villages on their northern side or have caused them to be misplaced in order to appear at all; but after 1610 mountains in profile-plan with a clear view almost all around them were established on English maps. During the 17th century the great Dutch cartographers improved this method, diversifying the mountains by little cols and ravines (often quite imaginary) and accentuating the contrast between heavy shading on the east and clear white on the west. The heights in fig. 14 are remote and restful as in a land where it is always afternoon.

Vertical shading and the representation of mountains in plan came in about 1680. This was an advance of historic importance, for it enabled the cartographers to show for the first time the length and breadth of a mountain and also to give some approximate idea of the gradients of its slopes. Figs. 26, 31, 32 and 34 illustrate vertical shading in various stages. The lines are heavy and close together where the slopes are steep, but spread out and fade away into the plains. Vertical shading could not, however, indicate the height of hills. To suggest ground rising slightly, like that south of Huntingdon (fig. 31), it is very suitable. The spot-heights placed later by the Ordnance Survey on all eminences were helpful but did not give enough information about the slopes.

In the 1770's 'hairy caterpillar' mountains (fig. 33), a by-product of vertical shading, began to appear upon maps. They represented large mountain ranges believed to exist in remote continents, but about which the map-maker knew little and the reader less. They are found crawling across maps of Asia and America until the end of the 19th century, when scientific explorers exterminated them. Hachuring (a scientific development of vertical shading), contours and layering are outside our period.

WOODS

Even on our early manuscript maps forests (and they were then numerous) were represented symbolically, for it was impossible for anyone to draw all the trees. A few trees, deciduous or pines or birches, whatever the artist saw, were therefore drawn in elevation to represent them, the area they covered

being largely left to the reader's imagination (figs. 2, 5). The Gough map of c. 1335 indicates, exceptionally however, the Sherwood and New Forests by the symbol of two graceful trees intertwined; an idea possibly suggested by the legend of the faithful lovers from whose graves grew two trees which interlaced. The line-engravers of maps adapted the convention used by the manuscript artists, except that they made the trees smaller and more numerous and gave them artistic little shadows to the east, while they defined the boundaries of woods more clearly (figs. 6, 9, 11, 23). This practice remained unchanged until about 1750. Some of the early line-engravers had indeed attempted a more pictorial symbol (fig. 20) which, though it looks like a clump of mushrooms, is a bird's-eye view and therefore hides little. With the disappearance of the great woodlands before the steady advance of agriculture, woods began to be represented about 1750 as close clumps of foliage seen in bird's-eye view (figs. 7, 32, though the former is from an estate-plan), and this remained the standard method down to about 1820. The Ordnance Survey now shows woods much as they appeared on fig. 32. John Rocque's map of Shropshire shows other interesting features—hedges bordering the roads, coal-pits north-east of Much Wenlock, and arable fields indicated by rows of furrows. The last had been represented on Continental plans of towns and villages since about 1680 (fig. 12), but not previously on any English maps except estate plans. The representation of parks as on fig. 11 has been practically the same since the beginning.

TOWNS

In mediaeval times towns were small but self-important and usually strongly walled. Miniaturists generally glorified them, possibly in the hope of a good reward, and represented them as enormous groups of handsome buildings with red-tiled or leaden roofs and many towers, surrounded by walls and flying their special flag (figs. 2, 8, 10). After the introduction of engraving this remained the symbol for all important towns; but it was often so elaborate that by comparison with the surrounding country, many large towns still covered some scores of square miles (figs. 4, 6, 11). As city castles went out of use after 1520, the tower of the principal church became the dominant feature. Unfortunately the number of red roofs led the map colourers to cover the whole symbol with red, concealing much of its fine engraving; and except during most of the 18th century,

when colour was eschewed on maps or used only for boundaries, red cities were the rule until about 1780 (figs. 6, 11).

In order to save labour and space the early line-engravers and the wood-block designers had used a simple circle for every kind of town (figs. 13, 20); but the engravers' love of artistry—and perhaps municipal pride—soon prevailed, and after about 1520 the circle and the towered city were combined, the former being placed at the church door to mark the supposed centre of the town from which distances could be measured (figs. 6, 11, 23, 24). During the brief period of woodcut maps a more homely symbol for towns appeared on them (fig. 9); but from about 1520 to about 1720 towers overran all the maps of Europe. In all sorts of combinations and with mysterious signs hung out from their battlements, they represented a great variety of settlements and institutions, as may be seen from fig. 30.

Unfortunately there was no uniformity in these towered symbols before 1700. For instance, some engravers used them, in pairs, for noblemen's mansions, but others preferred a house as symbol. From 1593 to 1700 an occasional conscientious map-maker inserted on his map an 'Explanation' like fig. 30 (though differing from it in details), and conformed to it. But very many commercial publishers and engravers did not trouble to ascertain facts about the smaller places, but just put in a tower and circle. The style of the towers varied from period to period, and can therefore help students to date maps. Only hamlets which had no parish church were represented by a plain circle. Yet the circle was far nearer to correct scale than any 'deanrei' or 'corporation', and it was also a rudimentary representation of a town in plan. It became the standard symbol for small places after 1800, and is now in general use on small-scale maps.

From 1590 onwards a few progressive map-engravers had portrayed their larger towns in profile-plan (fig. 24). For special town-plans this had become the rule much earlier; and it became the rule after 1608 for large, separate town-plans. These tiny bird's-eye views did at least give the reader a view into the interior of towns, though it was generally a misleading one. About 1660, however, all important towns began to appear in bird's-eye view on Continental maps. This was probably a result of the wars which were devastating Europe and of the special large-scale plans made for military commanders, who naturally wished to know all about any town which they had to defend or besiege.

In fig. 12 the buildings are all in bird's-eye view but the fortifications in plan. As already noted, this map depicts arable fields near the city, as well as gibbets in ominous elevation. The period 1675 to 1740 was one of uncertainty and transition. Large towns were generally represented 'ichnographically' or in plan, as blocks of black buildings intersected by white main roads, and smaller towns were 'scenographically described' as rows of tall houses in bird's-eye view standing beside the roads. Villages were indicated either by handsome churches, also in plan-profile, throwing long shadows to the east, or by tiny towers in elevation.

The movement towards representation in plan gained in strength after 1740, and figs. 26, 31, 32 show towns, villages and farms in plan. But John Rocque was ahead of his time in 1753. On most maps, including some of his own, down to about 1770, parish villages were still indicated by towered symbols, and churches and country 'seats' remained in elevation, probably because map publishers hoped for subscriptions and patronage from the parsons and squires. Fig. 31 is typical of an age in which democratic initiative in many fields was still largely dependent on the support of a powerful class of landlords. The mansions of the gentry are no longer represented by a mere symbol for 'houses of noblemen' as in previous centuries, but reproduced from actual drawings, while the stars signify, naturally, Members of Parliament. At the end of the century the Ordnance Survey reduced all buildings of every kind to plan, indicated churches only by a cross and omitted information about market days and antiquities as more proper to guide-books than to maps.

SEAS AND SEA-SHORES

In olden times maps very often opened on the foam of perilous seas and struggling ships forlorn in furious whirlpools, represented by swirling lines (figs. 8, 19, 21). Early rivers were also turbid, like Iser rolling rapidly (figs. 11, 23); but after the 16th century they were usually "decypher'd with a treble wav'd line or more" (fig. 32). Billowing seas were continued by the line-engravers and the makers of woodcut maps until about 1520 (fig. 13), but in time the lakes and the sea close to the coast became calmer, lying in long placid stretches (fig. 13). For about ninety years after 1540 water was usually dotted or stippled (figs. 6, 22). But the Flemings, who were the most notable engravers of maps between 1570 and 1620 and

many of whom were refugees in England and engraved English maps, devised an artistic representation of their own for the ocean waves. It looked like gleaming, broken chevrons, and from its resemblance to a shot-silk effect may be called *moiré* (fig. 24). After 1630 the sea was generally left blank, though for liveliness the engravers filled it for another forty years with whales and monsters which might have been the ancestors of Moby Dick, and down to about 1800, with decorative ships (figs. 13, 16, 19, 21, 22). The draughtsmen of late manuscript maps and charts, such as those shown in figs. 2 and 10, also left the sea blank but emphasized the coast-line with colour.

The representation of coasts has a little history of its own. Hatching was easy work for engravers, so from the beginning the engravers marked the coast-line by hatching, either outwards (figs. 22, 29), or inwards, making the land appear to be hemmed with stitches (fig. 25). Neither of these conventions was much used in the 17th century, when nearly all maps were coloured, but inshore hatching was more common and became usual on uncoloured charts and maps during most of the 18th century. From about 1790, however, outshore hatching of great length and heaviness came again into favour with civilian engravers, and was continued for a century, making the waters of our sea-side resorts look very gloomy. Hatching was not however the only method. The coast-line was often depicted almost pictorially on both manuscript and engraved maps and charts from 1585 to about 1730, the beaches being left in plan but the coastal features—cliffs, quays, houses and longshore taverns—turned back so that they faced the sky and were seen as in elevation (fig. 24). After 1730, when methods of representation in plan were being worked out everywhere, coastal features were shown in profile-plan, while along the shores ran a series of light, parallel form-lines like the fringes of receding tides (fig. 26). These conventions were adopted by the Ordnance Survey and the best map-makers (fig. 34). More recently submarine contours have taken the place of these form-lines, which they often resemble.

While the art of Nature has governed to a great extent the portrayal on maps of forests, rivers, seas and coasts, that of man, drawn from his social customs and his changing fashions in interior decoration, architecture and sculpture, is predominant in their scripts and their extraneous ornament such as cartouches and borders. These will be the subject of the next article.



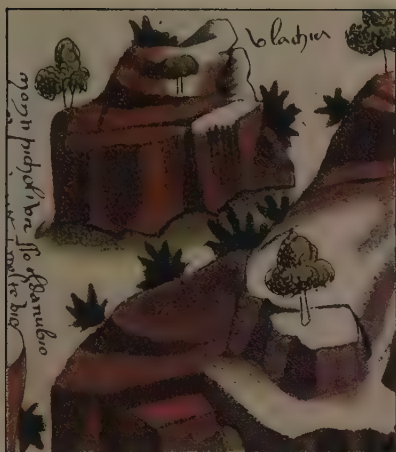
All maps, with the exception of Nos. 4 and 11, from the British Museum

1. From a MS. map of the world drawn about 1306 by Richard de Belleau, Prebendary of Hereford Cathedral. The world was small then by our reckoning, but its distant marvels excited the imaginations of educated people just as mystery plays and traditional romances thrilled those of the poorer folk. Above is an Arimaspean warrior, one of a Scythian one-eyed tribe who fought unceasingly against the gryphons (off) which guarded the gold and jewels of north-eastern Europe. Below him two Essedones are devouring their deceased relations rather than let the worms get them. North-east flows the river Acheron which, rising in the infernal regions, carried away the souls of the dead. An inscription tells us that the cowish monster which holds its tail so politely in one hand can be trained to be useful in war. Jason's Golden Fleece covers half Colchis, the Black Sea is coloured brown and eastwards the Taurus mountains rise in spiral slopes unknown to Nature



2. Spanish MS. world chart c. 1508. The king of a West African tribe believed to have the heads and tails of dogs (really baboons) appears beside his slaves. Timbuktu is enormous, like all map-cities then, but mountains show realistic development.
3. South America, 1693. A mysterious and magnificent Indian lurks between a moulded bracket border common in Baroque decoration and a satin curtain of Louis XIV richness.
4. Saxton's Oxfordshire, 1574. Elizabethan cartouche displaying a characteristic mixture of Gothic woodwork designs with strapwork and naturalistic motifs imitated from Italian Renaissance ornament





5

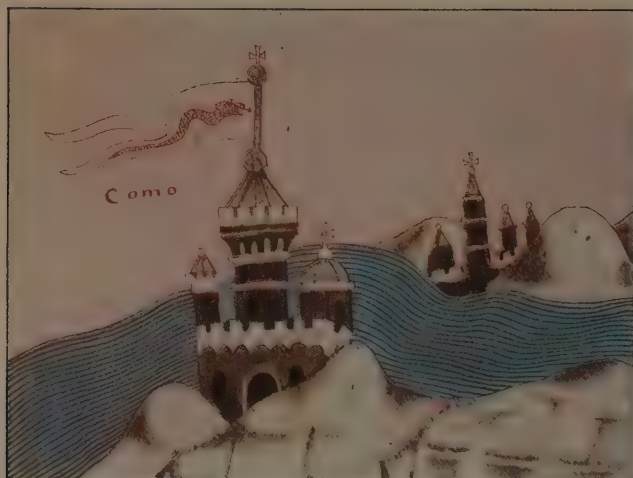


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5. On Italian maps of c. 1450-80 mountains were often represented as massive slabs with steep shaded edges and gullies running down them. Forests were indicated by scattered trees, coniferous and deciduous, and this became the convention from 1500 to 1760. 6. Saxton's Gloucestershire, 1577. Formal trees stand for the Forest of Dean. Newnham, a market town, has flanking towers and capital letters; villages have italic print. The Severn is both blue and stippled. Hills are coloured hummocks without indication of shape or height. 7. In the late 18th century woods were represented by thick clumps of trees in bird's eye view. The 'Procession Way' is the parish boundary for 'beating'



7



8



9

8. Italian MS. c. 1440. Como, fortified and huge, flies the Visconti banner. The lake waters lie in wavy, horizontal lines. Mountains have their summits white and their slopes shaded, almost as in modern vertical shading. 9. German wood-cut map, 1513. Switzerland. Towns are homesteads of vast size, hills hatched only along their crests; there are two kinds of woods and undulating lines ripple the lake. The script is wood-cut and clumsy. 10. Sicilian MS. portolan chart, 1552. Spain. The coast-line is coloured, the chief ports named in red, the scale, in leagues, appears on a scroll, and the compass-rose has 32 points. The inland features are mere artistic bravado



11. Speed's Middlesex, 1610. Hills are more shapely than Saxton's and shaded east. Hundreds and towns have capital letters, but villages have italic print, though Hampstead is larger than Kentishtown and both than Canonbury. This representation of parks was customary until c. 1850. Rivers have current lines. 12. Antwerp, c. 1690. One of the few good results of war is better maps. The 17th-century wars caused towns on most continental maps after 1660 to be drawn in plan, chiefly to show their lay-out and those new fortifications which so delighted Uncle Toby. Another continental improvement is seen, the representation of cultivated fields by furrows



11



12

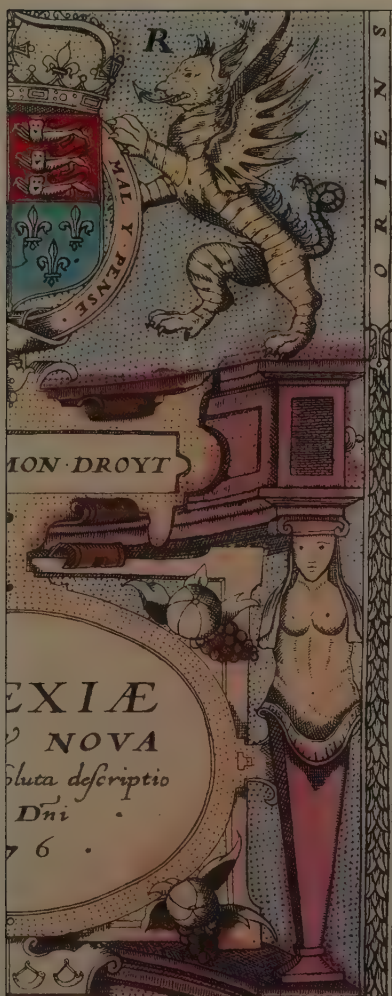


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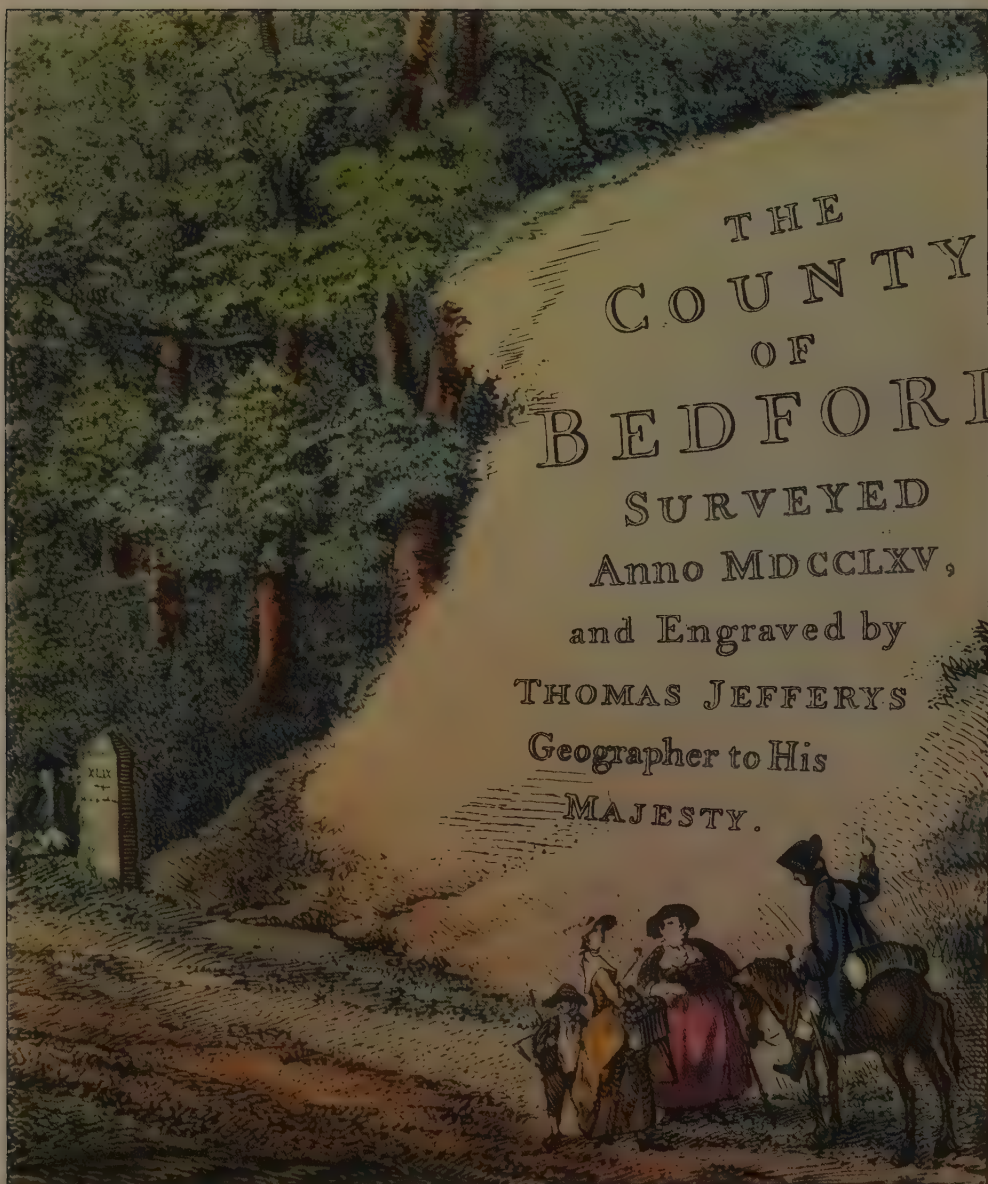


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13. Palestine. The swirling current, the horizontal-lined waters inshore, the ragged mountains shaded south and east, the plain circles for towns, the ship's build, the heavy and clumsy script, all indicate clearly a wood-cut map of c. 1513. 14. French, 1693, Switzerland. Mountains were by then acquiring shapes and heights (completely unreliable), and the modern system of shadows to the east was established. Villages are small circles, in an old tradition and because of the amount of other detail



15. Saxton's Essex. A classical caryatid as ignorantly copied from Italian pattern-books by English decorative craftsmen of 1576. A figure like this is carved on a bedstead in Anne Hathaway's cottage at Stratford. Above, the Tudor Dragon in the Royal arms. 16. During the period of Dutch cartographical supremacy, 1640-90, overfed cherubs, begotten of the school of Rubens, infested all engraved maps. 17. French, 1693. Muscular classical figures, martial motifs, coloured wreaths and ribbons and a Horn of Plenty form part of a typical Baroque cartouche



Kodachrome Photographs by H. C. Stacy

18. The ambition of the English moneyed classes to become county gentry and possess handsome country seats during the 18th century prepared the way for the Romantic Movement. Marianne's enthusiasm for the charms of *Nature in Sense and Sensibility* was partly inspired by Mrs Radcliffe's and Goldsmith's writings, but partly also by the general increase in travel among the gentry. The antique inscribed rock overhung by a tree and the wayside beggar in this cartouche reflect a Return to Nature in Art

The Diffusion of Greek Culture

I. Greece: The Origins

by R. W. MOORE

The diffusion of anything over the earth's surface is a proper subject for geographical study; and if the thing diffused—whether it be a plant, an animal or a 'way of life'—is found in the process of diffusion to have changed, so that an earlier definition of its nature no longer applies, this does not make the study of the process any less valuable. In this article the Headmaster of Harrow opens a series which, as it develops, may throw some light on the geographical process by which Greek culture was diffused and transmuted and, as he says, "made fruitful the world". Neither he nor any other contributor, however, can be expected to define the essentials of Greek culture, which are not themselves the subject of the series. Further articles will follow from time to time

GREECE is a land of sharp outlines and brilliant light. Almost at every turn, it seems, there are hill-lines on the horizon, running in different directions, dividing up the scanty plains and the habitable valleys. There are no great rivers to make considerable valley-units, no natural roadways to link up the whole. Round the coasts the sea is for ever running inland, so that the peninsula has an inordinate length of coastline in proportion to its area and almost every valley and plain has access to the sea. There are many islands, almost all mountainous. It is a land of mountain and sea. Islands and hills stand out against the brilliant Mediterranean blue of sea and sky. We may observe too that it is turned east, that while the western coast is rugged and inhospitable and has few anchorages, the eastern coast is rich in bays and harbours. It is remarkable how late in the day Greece comes into contact with Rome; but Rome faced the other way: all her harbours were on the west. From the earliest times Greek affinities are with the east.

This was the land which nurtured the greatest civilization of antiquity. It gave us the foundation of our Western art, literature, science and philosophy; and the Westerner who knows nothing of these things as they were in the hands and minds of the Greeks is culturally without roots. Homer, Sophocles, the Parthenon, Euclid, mathematics, Plato, the theatre, athletics, Pheidias, Aristotle, the clinical method, democracy and the ideal of freedom—these are a few random items from the Greek legacy. Yet these are the products of a strangely short-lived era; Egypt might count her civilization in millennia and Rome

count hers in centuries; but the Golden Age of Greece had come and gone in a hundred and fifty years.

Two questions linger in our minds as we look back on the story of Greece. Why were the Greeks so quick, so clear, so fertile of mind? And, on the other hand, why were they so fatally disunited?

The first question ultimately defies analysis. It can be talked round, but you can never see your way through it. You may say, as the Egyptian priest said to Solon, that the Greeks are perennially children. Certainly they have the unselfconscious zest and curiosity of children; but to say that is to re-state the problem, not to solve it. You may with Sir Richard Livingstone single out the notes that blend to make the Hellenic harmony, the Notes of Beauty, Freedom, Directness, Humanism, Sanity and Manysidedness, but you will be no nearer to answering why this people living in this land should have evolved this unique culture.

Climate, however, will suggest a clue. There is first the quality of that brilliant Greek light which causes shapes to stand out before the eyes in sharply-divided light and shade, which banishes half-tones and accentuates form. The same light may be found in Egypt and Arabia, but there the variety of form afforded by the mountains and the sea is lacking. The point does not admit of proof, but it is tempting at the cost of being unscientific to say that if ever there was to be a people with a clear-minded, objective vision it could have found no better nursery than Greece. That excess of light is inseparable from excess of heat, but in Greece the heat is



From 'Hellas' (J. J. Augustin)

Hoyningen—Huene

"That early mystical sense of water or wind or light in the moulding of eye and brow . . ." (Pater). Head of a youth; 5th century B.C.

continually tempered by the shade of folded hills, by the nearness of the mountains, by the continual infiltration of the sea and by the breezes that at sunset and dawn blow in the changing temperatures between mountain and sea. It is the mountains too that make for the seasonal extremes, to retain the winter snows and to send the sudden storms of autumn and spring roaring down the channels which in summer can serve for roads. Perhaps this interplay of climatic extremes will help to explain the moderation and self-restraint which was the most marked quality of the ancient Greek. The Greek was neither the passionate, indolent Southerner nor the

rude swashbuckler of the North, and it was a Greek who said that 'virtue is a mean between two extremes.

There is one other major characteristic of Greece that may be held conducive to sharpness of wits—its essential poverty. It is a land with its bones showing through at every turn; plains are few, cultivable earth is scanty and to be found for the most part in small pockets here and there between the mountains. Thus the Greek was sharp to seize an advantage or risk a new venture, whether his object was a raid on his neighbour's corn or the quest of fish or a trading voyage or a new home across the seas. Border wars, sea-traffic and colonization are part of Greek history from the beginning.

After thoughts such as these the second question becomes a little more tractable. Food must be grown in the plain, the plains are scanty and jealously guarded and divided by mountain barriers. Greece is cut almost in half by the sea at the Isthmus of Corinth where the waters of the Corinthian and Saronic Gulfs almost meet; and conflict between the peoples of North and South Greece is normal in Greek

history. The mountains for the most part partition out the mainland states: in the north, Thessaly, Aetolia, the two states of Locris, Phocis, Boeotia, Attica, Megara; in the south, Corinth, Achaea, Argos, Sicyon, Phlius, Elis, Arcadia, Messenia, Laconia: and the sea insulates the rest. The people of these states remained separate and independent. Their small-scale agriculture and the use of slaves left them much time for leisure and amusement, which might take the form of adventure in war or art. Though to the student of history the disunion of Greek from Greek may appear as a tragic flaw in an otherwise admirable whole, the narrow patriotism of

the city-state provided a training in civic life which has never been surpassed.

The mountains and the sea divide, and from both came the love of freedom and the call to enterprise, but the sea may also unite. Long before the time at which history begins, the seafaring Greeks were moving freely between the islands and round the Eastern Mediterranean trading in pottery, metals and wine; and the nearest approximation to Hellenic unity which the Greeks of the prime achieved, the Confederacy of Delos, was a maritime league controlled by Athens as mistress of the seas.

Who were the Greeks? A short answer is difficult and a decisive answer impossible. They came into Greece from the quarter from which vigour is for ever coming into European history, from the north. They came in waves sweeping down upon the older pre-Greek civilization that had flourished in Crete and the Aegean and in the Peloponnese since the third millennium B.C., a civilization whose splendours have been revealed by Schliemann

and Evans. Legend tells of two main waves of invading Greeks: the first, represented principally by the name 'Achaean', came in the last quarter of the second millennium and was responsible for the sacking of Troy (we may set the date about 1180 B.C.); and the second, dominated by the 'Dorians', came during the last century of the millennium. In the main the coming of the Achaeans was a relatively peaceful infiltration, but the Dorians were conquerors. They caused many of the older people to migrate and brought on Greece a Dark Age such as that which came on Europe at the fall of the Roman Empire in the West. The tribal movements caused by the Dorian invasions came to a rest about 1000 B.C. and out of the Dark Age the Greek states as we know them in history slowly emerged. It was in Asia Minor, in the coastal cities of the Ionians who had escaped the Dorian onslaught, in Miletus, Ephesus, Smyrna and their peers, that the revival began. The Ionians were the pioneers in exploration and trade, in the poetry and





Paul Popper

Delphi, mountain-sanctuary of Apollo and his oracle, was the Geneva of classical Greece; the centre of an inter-state religious league and of a Pan-Hellenic athletic festival. It attracted visitors from all over the Greek world and was a powerful agency in the dissemination of Hellenism



Catherine Harrison

"The mountains and the sea divide . . . but the sea may also unite." An Aegean seascape from Delos, the focus of the Athenian maritime league and another distribution-centre of Greek culture

science and philosophy of the new age. It was with them that the term 'Hellenic' and the ideals of outlook and conduct that distinguished the Hellene in his own eyes from the barbarian took shape. It was they who first kindled the torch of Hellenism. When they went down before the rising power of Persia they had handed it on to the Hellenes of Europe.

In Europe the veil begins to be lifted at the beginning of the 8th century B.C. on states crystallizing round citadels, for example at Athens, Corinth and Argos; on an intensive process of colonization (the propagation of the Greek city-state round the Mediterranean), which lasted on into the 6th century, round the coasts of the Aegean and of Sicily and Southern Italy; on the steady growth of trade and wealth; on the rise of enterprising 'tyrants' in many cities; on a general revival in culture over the Greek world. But for all the good they did the tyrants were hated and one by one were driven out.

Athens, so much the greatest city of Greece that it is oftenest of her that we are thinking

when we speak of Greece, was brought to her greatness by her tyrant Peisistratus (547-527 B.C.), whose dynasty was finally driven out in 510 B.C. and replaced by the first democracy. The Athenians prided themselves on being Ionians; they had lived in their country, they said, since the beginning of time, long before the coming of the Dorians. Their great rivals the Spartans were Dorians who long since had become the Nazi-like state with the iron military discipline which they remained to the end of their history. Early in the 5th century came the great menace of the new totalitarian Persian empire, which having overrun Ionia and the Greek states on the coast of Asia Minor, set itself to include the Greek mainland in its career of aggression. The first invasion was beaten by the heroism of Athens standing alone on the immortal field of Marathon; the second, more terrible onslaught was beaten by the collective efforts of the Greeks, and by the heroism of fighting man and seaman conjoined. Greek history as opposed to the history of separate states has no higher pinnacle than Thermopylae,



From 'Eternal Greece' (Atlantis Verlag)

"Ours is no workaday city only . . . we are lovers of beauty without extravagance and cultivate the mind without unmanliness . . . and our city is an education to Greece." (Pericles, according to Thucydides)

Salamis and Plataea. Greek discipline and the steadiness of heavy-armed spearman and skilled oarsman had triumphed over numbers and over-confidence. In this united Hellenic victory over Persian might was a great hope of Hellenic unity. It was not to be fulfilled. Sparta retired to lord it in her half of Greece south of the Corinthian isthmus. It was left to Athens to extend her sea-power over the Aegean, to drive back the Persian and to league the islands in the cause, and in so doing to build up for herself with great enterprise and vitality a great empire. It is to the zenith of the empire, the middle of the 5th century B.C., that the Golden Age of Athens belongs; the age which produced Pericles, Pheidias, the Parthenon, Aeschylus and Sophocles, to mention but a few of the high-lights.

Why was Athens so great? Here are the words of an Athenian writer (Xenophon, *Hellenica*, vii, i, 3):

It seems to me indeed that Providence intended this nation to be mistress of the seas. For in the first place our geographical position is most favourable; we have a sea-board abounding with good harbours, which is an indispensable condition for naval power. Moreover we possess innumerable ships; in fact it is a tradition with us to be rulers of the sea. All those trades and industries that are connected with a seafaring life are indigenous among us; and we have more experience in navigation than any other people. For most of us make our livelihood out of the sea; so that while following our ordinary pursuits, we are serving an apprenticeship to the art of naval warfare. Yes, and besides that, there is no power that could muster so numerous a fleet of warships as we



Martin Hurlimann

The Acropolis of Athens: on the left is the Propylaea, on the right the Parthenon. Athens was the supreme centre of Hellenism; the Parthenon, matchless in site and proportions, its innermost symbol

could at a pinch. And this is an important factor in naval supremacy. For the dependent states are always most inclined to rally round that flag which is the first to assert its pre-eminence.

If her homeland was too poor to grow enough food for all her population, her olives and pottery were attractive exports and in her command of her sea she could convoy safely the necessary corn imports from the corn-fields of South Russia. The foundations of her economic greatness had been laid by the law-giver Solon, who in substituting the policy of 'cash-crop farming' for 'subsistence farming' had begun the process of her specialized commercial and industrial development. In this development Athens was not unique: it was shared by many other maritime states, and the only conspicuous exception was

Sparta, whose adoption of state-forms similar to those of fascism had artificially arrested the growth of her civilization.

By the beginning of the 5th century the old self-sufficiency of the city-state was fast being transcended in the economic field. The rest of Greek political history is the story of successive attempts to transcend it on the political plane. The Persian wars gave a great chance and the Athenian League came near to succeeding; but instead of developing the federal-idea, which is the extension of the democratic idea to an international order, she insensibly resorted to the use of force and became a tyrant-city, and her attempt failed. Her rise had excited the jealousy of the Peloponnesian states and of Sparta; and her empire had infringed the rule of freedom. There followed the disastrous Peloponnesian

war (431-404 B.C.), whose story we can still read in the pages of the Athenian Thucydides, in which Athens after a confident beginning was let down by the shifting policies of her democratic leaders and was beaten by Sparta and her allies, who to their shame had to call in the Persians before the struggle could be won.

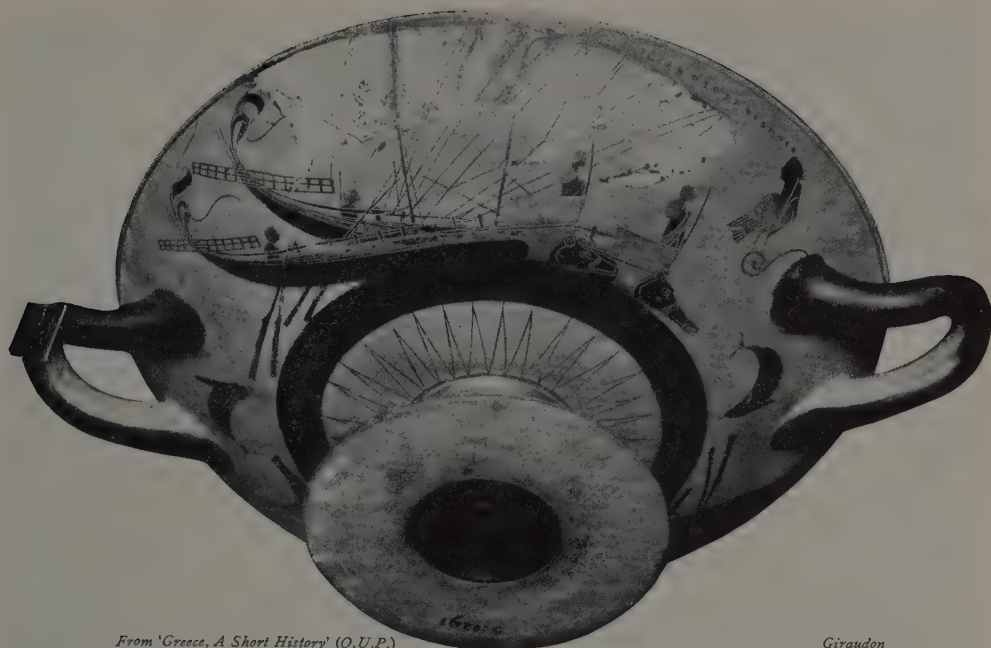
It remained for the Greek world, having experienced the mild 'slavery' under Athens, to find that 'freedom' under Sparta was something worse. For some thirty years Sparta precariously and without vision dominated the Greek mainland until her power was

wrested briefly from her by the military genius of the Theban Epaminondas (371-362 B.C.). But Epaminondas was killed in battle and Theban supremacy could not survive him. At this point a new power appeared on the scene in Philip of Macedon. Macedon was a half-Hellenized kingdom which had so far exercised little influence on Greek history; Philip consolidated it and gave it a military strength which Greeks and Persians were to find irresistible. The reasons for his success are to be found partly in his own personality and vision, partly in his tactical innovation of the phalanx (a compact deep-massed formation



The Louvre, Paris

Colonies and commerce. The king of Cyrene superintends on shipboard the despatching of silphium, a medicinal plant exported to all parts of the Mediterranean world. The bags are filled, weighed and stowed in the hold. An animated scene of colonial life depicted inside a cup of the 6th century B.C.



From 'Greece, A Short History' (O.U.P.)

Giraudon

Sea-communications are implicit in the earliest stirrings of Greek history. A picture of ships on a wine-cup of the 6th century B.C. Note the partly-furled sails, the helmsmen between the steering-oars and the look-out men in the bows

of pikemen with great thrusting power), partly in the inadequacies of Greek policy. He came to the throne in 359 and embarked almost immediately on a calendar of aggression. Proceeding partly by threats and force, partly by conciliation and promises, he systematically gained control of the northern seaboard of the Aegean with its rich resources of minerals and timber and insidiously worked his way south. The Greeks were slow to see the danger, as the Western European powers were slow to see the Nazi menace before 1939. Thebes had run her brief course and Sparta had retired into her Peloponnesian shell; it was left to Athens, which had quietly recovered from the calamity of the Peloponnesian war, to take the lead. Her lead is largely the story of one man, Demosthenes, who at last persuaded his fellow-citizens to see the danger and fight against Philip. In the end he persuaded other cities to join the cause, but the effort came too late; public spirit and the zeal for freedom were not the forces they had been in the time of the Persian invasion, and the defeat at Chaeronea (338) brought the whole of Greece under the control of Macedonia.

Philip, once master of Greece, was generous

and conciliatory. He bound the Greek states together in a Panhellenic League and at once gave it an objective—a Panhellenic campaign against the old enemy Persia. Philip was assassinated by a personal enemy in Macedonia before a start could be made. His death was the signal for a general insurrection among the Greek states, but his son and successor Alexander crushed the insurrection with devastating swiftness, and the great expedition began. There followed the most spectacular conquest in military history. With a comparatively small force this young king of twenty-two carried all before him; in eight years he had mastered the great Persian empire and advanced in triumphant progress beyond it to Northern India. The story belongs elsewhere, for it is the story rather of a unique military genius and of a supreme personality than of Hellenism, but it meant much for the influence of Hellenism in world history. Alexander died in 323, in the thirty-third year of his age and the thirteenth of his reign, before his great empire could be organized, and his successors carved it into warring kingdoms, but he had carried Greek language and culture far and wide in the Near East and it remained to be a foundation for



Paul Popper

"The glittering-leaved olive, nurturer of our youth, the gift of the grey-eyed Goddess." (Sophocles)

Roman civilization and a vehicle for the spread of Christianity.

The rest of the story until the coming of Rome in the second century B.C. is a story of power-politics. At the death of Alexander the patriotic party at Athens made a brief bid for freedom, but it was soon over and for the most part Greece under the dominion of Macedon played only a passive part in the wars of the Successors, though sharing in the new economic prosperity of the enlarged Alexandrine world. The new Achaean and Aetolian Leagues for about a century kept alive the expiring flame of Greek liberty but the promise of federal progress was frustrated by the conflict between them. Stands were made against Macedon and Rome, but by the middle of the 2nd century it was all over. The legion was too much for phalanx and hoplite, and the confidence and drive were all on the other side. There was one last short-lived flare-up when some of the Greeks, including the Athenians, joined Mithridates of Pontus in his invasion of 88 B.C.; and Greece was yet to be the scene of tumultuous events in the civil wars between Caesar and Pompey,



British Museum

The olive industry was the mainstay of the Athenian economy; it provided the butter, soap and lighting of the ancient world. (Above) Jars filled with olive oil were given as prizes in the Pan-Athenaic games. (Below) Whipping down the olives. A painting on a wine jar of the 6th century B.C.

British Museum





Paul Popper

The temple of Hera at Olympia, the scene of the greatest of all Pan-Hellenic festivals. "As water is most excellent; as gold, like flame at night, gleams brightest of lordly wealth; so, if you would tell of victories in games, look not by day for any star in the lonely sky more genial than the sun nor . . . think to praise a place of festival more glorious than Olympia." (Pindar)

between the killers and avengers of Caesar and between Antony and Octavian. But under the Roman empire the land had peace and finds little mention in the records of history. Her culture, largely adopted by Rome, exercised an enduring influence on the civilization of the Empire. "The Empire", says Toynbee, "was essentially a Greek institution . . . at bottom a federation of city-states, a solution of the political problem with which Greek society had been wrestling since the 5th century B.C., and even the non-municipal element, the centralized bureaucratic organization which Augustus spread like a fine . . . net to hold his federation of

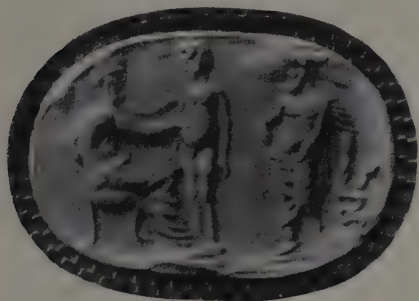
municipalities together was largely a fruit of Greek administrative experience." Individual Greeks continued to earn for the race the tributes, not always flattering, due to its liveliness and versatility; the study of philosophy and mathematics was maintained in the academies of Athens where students might seek it. But there are no epoch-making names in Athens after Plato and Aristotle; with the death of Greek political independence the real vitality had left the old centres and gone to wider fields.

The tragic disunion which in modern eyes mars even the story of the prime of Greece persisted until the iron hand of Rome finally

descended and left her limp. That she triumphed over the Persian aggressor is her lasting glory; that she struggled against Macedon and in a way against Rome is, by her lights, to her credit; but each of these struggles was marked by internal quarrels. It is easy for us, who after long lapse of time have a different perspective, to be wise after the event, and we may recognize with Freeman that if the Greek city-state could "develop its individual citizens to a pitch which in the large kingdom is utterly impossible", it could so develop them only "at the cost of bitter political strife within and of

almost constant warfare without"; and that the small-scale loyalty of the Greeks was as essential to their being as the clear-eyed inquisitiveness which led them to their finest achievements in science and art. It is doubtful whether we should have had the one without the other, and whether we can "wish the fault undone, the issue being so proper". In the last resort it is the duty of the historian not to censure but to understand. If the Hellenic prime seems but a moment in the long course of history, its brevity is the measure of the intensity which made Hellenism one of the greatest formative influences in the evolution of our Western civilization and a living force to the present day.

But there is another way of looking at the story. The amateur of history is always hankering after permanence. He wants the hero and the heroine to go on living happily ever after; he asks why the golden age of this and that state could not have gone on into an indefinite future. And when he sees or thinks he sees the Periclean age or the classical age of Greece or the Roman Empire or the Elizabethan age at an end, he draws a line and laments a tragedy. We all know these lines; they usually come after the deaths of kings and leaders, sometimes after battles. But it is largely fallacious; there are no endings in



A Graeco-Roman carved gem



Catherine Harrison

The drama and the practice of medicine were two of the strongest threads in the cultural unity of Greece and two of the most significant items in her legacy to us. Epidaurus with its theatre (above) and temple-hospital of Asclepius, the god of health, had them both. The carved gem (a sard, believed to have magical properties) shows a doctor examining his patient, while Asclepius looks on



Acropolis Museum, Athens

A war-memorial. Athene looks in mourning at the funeral tablet of an Athenian soldier who has died for her. In that age Athenians were everywhere, and there is extant a similar memorial for the year 459-8 B.C. commemorating men of a single Athenian tribe killed in action in Cyprus, Egypt, Phoenicia, Haliëis, Aegina and Megara

history, only goings-on. We may wish that the Greek states could have found a unity, could have welded themselves into a compact whole and resisted all comers. If that had been, could the influence of Greece have been so widely disseminated? As it was, it spread almost incalculably far. It spread to India, where it inspired the Graeco-Buddhist culture of the Punjab which, through the Mauryas and Asoka, powerfully contributed to the unification of India; it spread to the Arab thinkers, sending the repercussions of Hellenic philosophy, science and mathematics through the great world of Islam; it spread to Rome and became its soul (or, as Toynbee puts it, "the pulse of the Empire was driven by a

Greek heart"), and through Rome to our Western civilization of today.

And this is only part. When the Western Roman Empire went down in the 5th century A.D. the Eastern Empire, which beneath the Roman veneer was essentially Greek, went on mediating through the Byzantine heritage the influence of the Greek culture to all quarters of the compass. The word 'Byzantine' opens up a world within a world; indicates the Hellenic leaven at work linking up successive civilizations in curious ways. We in the West are taught little of this; Byzantium hardly swims into our ken before the fall of Constantinople to the Ottoman Turks in 1453 brings Byzantine refugees with Greek manuscripts westwards to help on our Renaissance. But Byzantium had done more than that. It had spread its influence through the Balkans into Central Europe, it exercised a marked influence on Carolingian and Anglo-Saxon life and art, it left its mark on Moslem architecture and it issued in Russia and the great Orthodox Church.

This diffusion became possible through the Macedonian and Roman conquests. "Except a corn of wheat fall into the ground and die, it abideth alone; but if it die, it beareth much fruit"; when the body politic was dead, the soul went marching on, making fruitful the world.

That is true enough. And yet the Hellenic body was not so easy to pin down or to destroy. In the 8th century B.C. Greek influence stretched from Italy and the South of France in the west to the Black Sea and South Russia in the north and to Egypt in the south. By the 3rd century it stretched from Spain to India, from the Caspian to the Indian Ocean. There were Greeks all over the Roman Empire; like the Jew, the Greek thrived on adversity, he became at home in all lands. It all reminds one of the music-hall joke of the lecture entitled "Our far-flung Empire and who flung it"; the Greek empire was not of the sword but of the mind, and those who came against Greece served but to fling her influence farther afield. When the Persians came against the Phocaeans they put themselves and their belongings on shipboard and began life again, it is said, some in Corsica and some at the place which is now Marseilles; and when the Spartans were being tiresome in the allied counsels of 480 B.C. Themistocles and the Athenians, having seen their city overrun by the Persians, were ready to do the same thing. It is men and ideas, not walls, that make cities and hold a civilization together; and not only the compact continental powers that can dominate a world.



Two wings of the star-shaped All India Radio Headquarters, New Delhi

Broadcasting in India

by PATRICK RYAN

The following article initiates a series which will describe the local conditions that have influenced broadcasting in the chief regions in which it is at present undertaken on a large scale; and will thus throw fresh light on the cultural differences within, as well as between these regions. Mr Ryan, who is Controller of the B.B.C. News, visited India in 1943-44 in connection with his work

THE first attempt to start regular broadcasting in India ended with the company concerned going into liquidation and the second, a State enterprise, had its obituary notice issued as an official communiqué. These grave illnesses of an Indian Broadcasting Company and of an Indian State Broadcasting System were both marked by the same symptoms. Each patient suffered from acute malnutrition. There was not enough nourishment in the soil of India to bring up that greedy and exacting infant, a new-born radio system. Happily, the official obituary notice caused a stir. Government was induced to give the Pagoda Tree another shake and, not without a difficult period of gestation, All India Radio came into the

world. This child added yet another member to the large family of Departments which makes New Delhi reminiscent of the Old Woman who lived in a Shoe. It is now over ten years old and well past all danger of infant or any other kind of mortality. The annals of its short life are worth telling for wider reasons than are to be found in broadcasting alone. They throw a homely light on most of the problems with which any authority responsible for the advancement of India has and will have to contend.

When Lord Irwin, the Viceroy of the day, spoke at the christening of the original company, he prophesied that the number of listeners would increase tenfold and that this new application of science would have its



The orchestra and the audience. (Above) In the All India Radio broadcasting station at Lucknow. (Below) A group of listeners to a village programme. The receiving set has been specially evolved by the Research Department of All India Radio. It is contained in a locked metal box with the controls inside, to prevent unauthorized interference, and is already tuned in to the local station



devotees in every part of India. Anyone familiar with broadcasting in the West would have thought that His Excellency, eighteen years ago, was keeping well on the safe side of optimism. There were then less than one thousand licensed listeners in a sub-continent holding one person in five of the world's whole population. But progress in India goes by bullock-cart and events have proved that what the Viceroy said was by no means over-cautious. Licence figures have, it is true, risen far higher than his tenfold and are now around the two-hundred-thousand mark, but much must be done before listening in India can be said, except in a most rough-and-ready sense, to have its devotees in every part of the country. While A.I.R. programmes are indeed listened to from the Khyber to Cape Comorin, their effective field is spread exceedingly thin and big patches of dry bread comes between the smears of butter.

"If only you could all forget Congress and the Gurkhas you might begin to understand what India is faced with." This remark was made to me by a witty Moslem friend in a watches-of-the-night discussion. Most of his fellow Indians present agreed. He was not dismissing politics or the army. He simply meant that when one has shaken one's head over the involutions of parties and praised the Indian soldiers (among whom those fine fighting men the Gurkhas are so frequently and inaccurately included) one is only on the threshold of Indian problems.

The first problem faced by A.I.R. is an example. The overwhelming majority of Indians are so poor that they cannot afford a wireless set even if it were sold at a rock-bottom price based on the most efficient and far-reaching methods of mass production. The average Indian family has an annual income of under £5. This explains why the number of licences remains closely the same as those for motor-cars and telephones. Nor is there any reason, however far one looks into the future, to expect that this state of affairs will change. If it does then so much the better, but nobody charged with the practical conduct of broadcasting has any right to bank on a change.

This handicap was recognized from the first, and a most interesting experiment was soon launched to get round it. Receiving sets specially made to resist heat, dust and insects, and to carry programmes up to a hundred yards, were introduced. Thus began Indian village community listening. It made mistakes and it got over many difficulties and it is not yet beyond its opening stages. There are about three-quarters of a million villages

in India (most of them, incidentally, unprovided with electricity) and only a few thousand so far have communal wireless sets. Nevertheless the start has been made and enough evidence collected to show what a powerful instrument has been put into the hands of educationalists in health, agriculture and other fields, and of entertainers. At first the villagers were suspicious of the novelty. Did it mean another way of taxation? Was it propaganda? (They did not know the word but they smelt the thing.) Again, was it interesting? The answer here was by no means an unqualified affirmative. To interest a rural audience taking its ease in the hour after sunset when field work is over and food eaten, needed special experience drawn from trial and error. Early failures led to the conclusion that five minutes was a limit of length, that music must give relief to talking, and that dialogue held the villager more quickly than monologue. Since then all sorts of techniques have been tried and the experiment is slowly spreading. No one who has seen and heard them will ever forget these Indian village listening sessions. The crowd intent in the dusk, the sound from the box breaking the stillness of the heavily scented night air, the thought of what all this can mean for people hitherto starved of instruction in the A B C of husbandry and hygiene and strangers to any except home-made forms of art and entertainment—all these things contribute to one's admiration of the pioneers.

These pioneers worked inevitably with an eye to diversified local needs and this brings up another main problem of Indian broadcasting. A.I.R. has neither a common language nor a common standard of culture to build upon. An Indian Army officer who in peace-time had been a lecturer at a Far Eastern university put the language situation to me in this way. He said: "Tamil is my native tongue" (he comes from Madras). "I've learned some Sanskrit so as to be able to read our classics, much as you Europeans learn Greek and Latin. I have had to spend time on Urdu for military purposes. I could not have earned my living without English and as an academic man I found it essential, if I were to keep abreast of my subject, to learn French and German. And that really hasn't left me any time for other Indian languages. So I can't read our greatest Indian poet, Rabindranath Tagore, in his native Bengali and I couldn't understand Mr Gandhi if he made a speech in his native Gujarati."

Such is the position of the educated

Indians. Unless they use English they cannot all communicate. This clearly puts a great limitation on national broadcasting. A speaker who talks English can be sure of getting at the educated public but he misses the masses and also quite a large proportion of the women of the classes in which men know English. Once he gives up English a speaker has to concentrate on that section of his countrymen who happen to speak his own particular language. He cannot hope to be understood by the rest, and he couldn't (if he were, say, a politician anxious to have his voice heard throughout the nation) get round the difficulty by doing a series of speeches in various languages—for the sufficient reason that he couldn't speak them. I asked many Indians whether they had among them any linguists who knew all the main languages, but I never heard of a single case. Nor did I meet any Indian who expressed regret that he didn't know the other languages. The men of the north are content to argue about the differences between Urdu and Hindi and have nothing linguistic in common with their eastern neighbours, who are loyal to Bengali, except their disregard for Tamil, Telugu, Malayalam and the other languages of the south. This Tower of Babel state of affairs no doubt goes a long way to explaining a puzzling feature of Indian radio that at once strikes a visitor familiar with European and American methods. The radio in India appears never to have been used by the Indian political leaders as a main instrument in their campaigns. Mr Gandhi has, I was told, never broadcast nor even sought to broadcast. One would have expected A.I.R. to have been pressed by prominent Indian politicians for time on the air.

The influence of the Tower of Babel does not stop with speech. It equally makes it impossible to have plays on a national basis. Such a basis, indeed, is hard to find anywhere in the field of entertainment; and thus we can get through the vista of radio a most interesting view of the Indian problem as a whole. India has no nation-wide traditions of art. The lion's share of any national broadcast programme goes to music of one sort or another. Between the light stuff (dance tunes and so on) and the chamber music and the operas, the greatest proportion of listening hours are spent. But whether it is 'background' or more exacting entertainment which demands the whole attention of the listener, there is no common multiple in India. When the problem was first being tackled the Indian Government acknowledged its complication with complete frank-

ness. They said in an official report: "In India the whole art of music has largely fallen into the hands of prostitutes and *mirasis* and from this association has sprung a general feeling that there is something inherently immoral about music itself."

This state of affairs, however astonishing it may be to a Western observer, has to be accepted as a fact. Indians are fond of music and proud of their classical traditions, but they have never acquired the habit of listening to it in opera-houses or in concert-halls or in any of the ways we regard as commonplace and which involve, first, the free mixing of the sexes in the audience and, secondly, a high standard of social respect for the performers. Thus A.I.R. at once came up against an extremely awkward problem of recruiting artists to perform in their programmes. So far from queueing up to be given engagements, as happens in the West, women were hard to recruit because, if they had been heard on the air, they would have been liable to face social discredit. The situation can only be made clear in Western terms by suggesting an extreme parallel. Suppose when Lord Reith was building up the B.B.C. he had had to recognize that any girl who took part in a B.B.C. musical programme might be regarded by her friends and relations much as though she had taken up a strip-tease turn on the music-halls, or appeared in the chorus of the Folies Bergères. This puts it crudely but roughly in perspective, and, although there have been some changes, the position of women is still a difficulty. A similar one faces the medical services because of prejudice against nursing as an honourable career.

There are, further, most highly involved technical obstacles to the smooth conduct of programmes. Indian music is built almost entirely on vocal melody and uses only a very limited system of notation. There are few generally accepted standards not only for songs and compositions, but also for voice production and the art of singing. Apart from this, the various schools of Indian classical music adopt a rigid and uncompromising attitude towards any change or progress, and lastly, the distinction between classical and light music (which Heaven knows causes enough trouble in Britain) is added to in India by new causes of controversy being introduced, such as the confusion of classical with religious motives, and of light with erotic ideas. A man would need to be both an expert musician and an expert orientalist to thread his way through this tangle. The main point that emerges for a layman is that

Indian Orchestral Instruments



1



2



3

1. The Sitar is used throughout India. The instrument is played by means of a wire plectrum placed upon the forefinger of the right hand and the strings are struck near the bowl. They are stopped with the fingers of the left hand
2. The Tambura is the classical drone accompaniment of the stringed group and is perhaps the commonest stringed instrument in India. The four strings are gently pulled one after another, without a plectrum, and the process is continually repeated
3. Tabla Tarang, a set of drums representing a whole octave. The Tabla is found in the north and centre of India and rarely further south than Bangalore. It is essentially a concert drum and lends itself to all kinds of drumming finesse

each part of India has its own tastes, both on the high and on the low level. What is meant in Madras is poison in Peshawar. You keep on coming up against baffling statements such as: "There's no light music in the Carnatic."

All these things being so, it would be idle for a Director of All-Indian music to attempt to put on any sort of performance from grand opera to dance bands that would go out from a central point and be welcomed by all listeners. It may be that A.I.R. as a department of State has suffered, as is the way of all bureaucratic forms of entertainment, more severely from pedantic objections than happens to private enterprise. I say this because Indian films, which are increasingly popular, seem to carry their own light music pretty well from end to end of the sub-continent, and to draw packed audiences. All the musical highbrows to whom I spoke in India deplored this development with great violence and looked to radio to keep the flag of a high aesthetic standard in music flying. They were all equally agreed that in India one must accept that it is not a case of one single standard; and that anything equivalent to a London audience listening with appreciation to music composed in Germany or Russia or Italy is not yet practical politics.

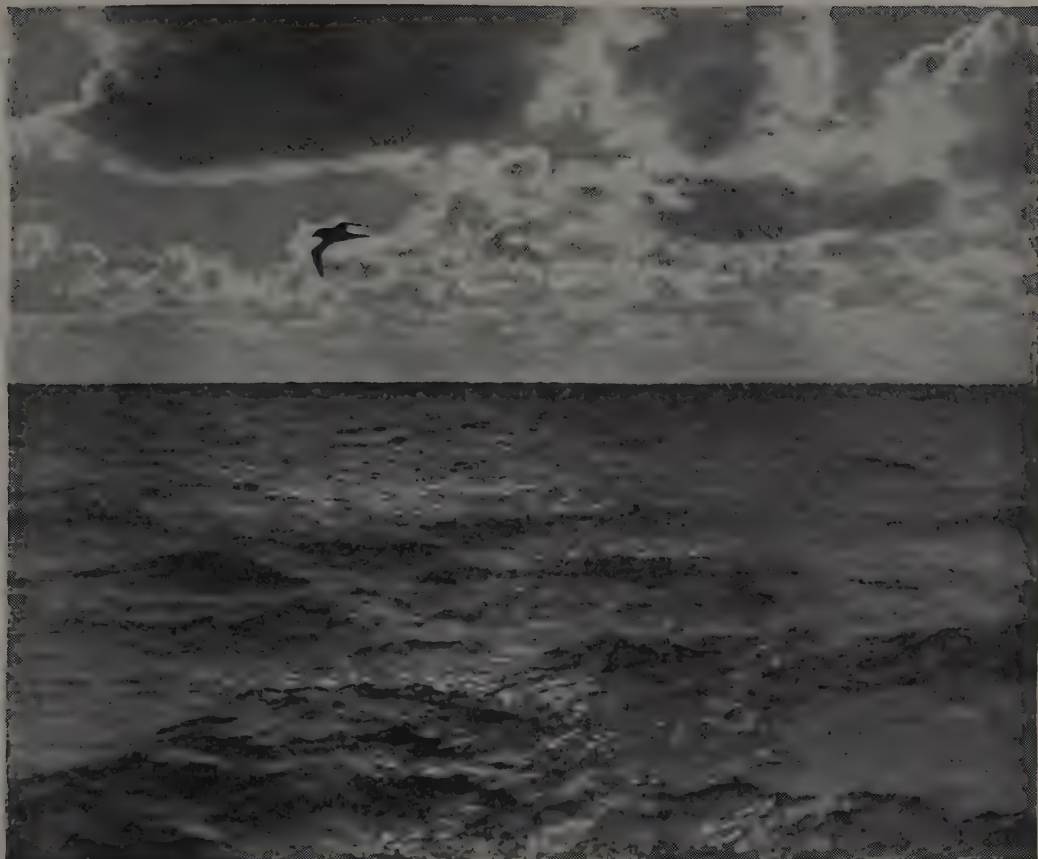
There is nothing stranger about Indian Broadcasting Houses than the music studios. The performers sit on the floor and are armed with unfamiliar-looking instruments. They seldom have any sheets of music to go by and to a Westerner the whole performance seems oddly casual. An old gentleman with a white beard will tap away at some odd-shaped affair while his colleagues in the orchestra remain

silent and inactive. Then a young woman squatting in the corner will start singing, as it seems, to herself, or three or four others will pat or scrape their exotic instruments. It is very difficult to believe, after watching and listening to half an hour of all this, that those engaged in it could repeat the whole thing in exactly the same sequence. Whether they do or not I am not competent to say. Some people assured me that they do and others that they only do so in the rough. The position so far as I could make it out is this. There are traditional pieces of music which have never been written down, but they are sufficiently familiar for people to follow their general lines, while allowing for a considerable licence in improvisation. I asked one Indian acquaintance whether it was as though everybody knew the plot of *Hamlet*, which had been performed for hundreds of years, but none of the actors had got anything like word-perfect in their parts. They knew the action and roughly what they had to say, but you would never get two performances of *Hamlet* that were word for word the same, although you would get the most familiar speeches—"To be or not to be . . ." and all that—exactly similar. He said, with a smile, that it was. He knew that my ignorance of music is limitless.

Against this background of difficulties inherent in the Indian scene, work is being done with enthusiasm by a staff that today is almost entirely Indian. The war has brought a greatly increased strength to the power of transmission and the next few years are bound to see the power of listening as a factor in Indian social life grow greater.



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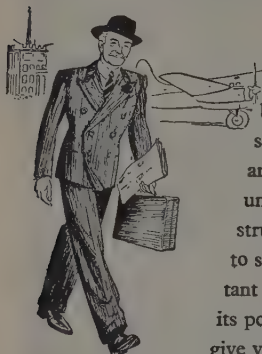
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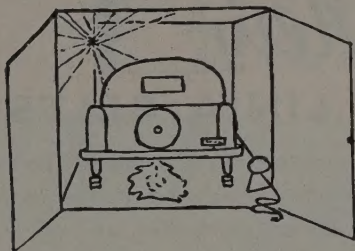
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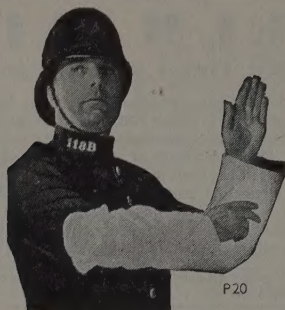


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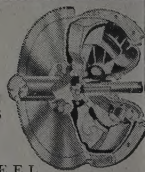


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